

**Articulation  
Differences and Disorders  
Manual**



*Special Education Programs Division*  
*Transdisciplinary Services*

**Articulation  
Differences and Disorders  
Manual**

San Diego City Schools  
Office of Instructional Support  
San Diego, California  
2004–2005



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# **I. Overview of Service Delivery for Articulation Differences and Disorders**





# Roles and Responsibilities

## **Roles of a Site-Based Speech-Language Pathologist**

A public school speech-language pathologist (SLP) supports students' speech sound acquisition by providing three important services at the site: education, consultation, and assessment/intervention. The first two roles, education and consultation, are commonly viewed as general education service. The third role, assessment/ intervention, is a special education responsibility.

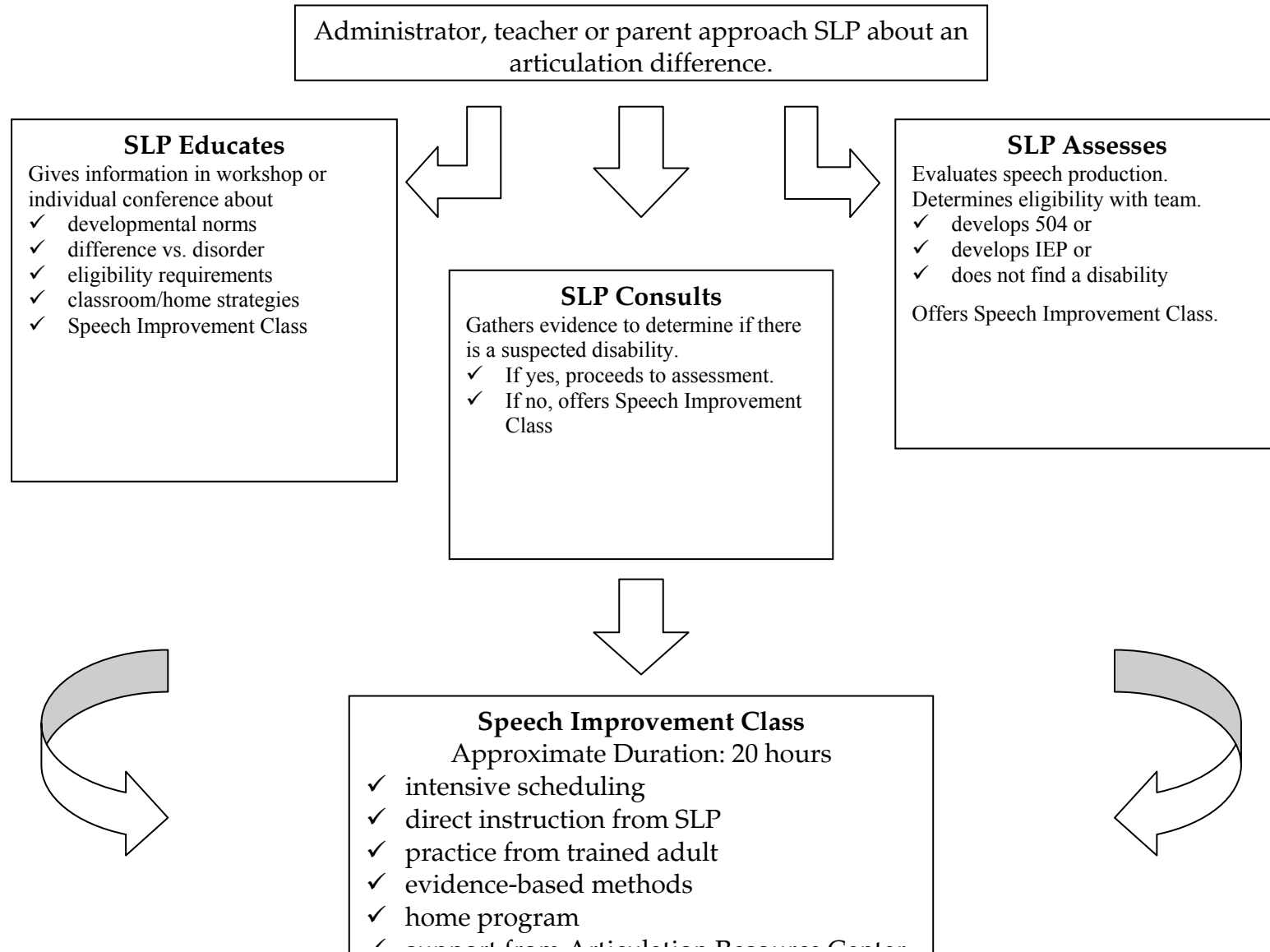
In the first role, the SLP educates the staff and the community about the characteristic features of speech development in the following areas:

- ✓ Nature of normal and atypical speech development
- ✓ Typical ages of sound acquisition
- ✓ Definitions of articulation, phonology, apraxia, differences, and disorders
- ✓ Impact of speech on literacy development
- ✓ General strategies to facilitate speech acquisition
- ✓ Eligibility for special education requirements
- ✓ Range of services: accessing Speech Improvement Class by recommendation or by IEP
- ✓ Referral for consultation or evaluation

In the second role, the SLP consults with administrators, teachers, and parents to answer specific questions about a particular student or classroom instructional practice. The SLP provides information and advice about developmental speech levels, classroom strategies that support speech acquisition, and communicative management techniques that result in positive peer interactions. In addition, the SLP helps the teacher or parent determine if a referral for special education is warranted.

The third role for the SLP is to assess students who have suspected speech disabilities and to provide evidence - based intervention if they are eligible for special education services. Which role the SLP assumes will depend on the nature of the inquiry. The SLP may choose to (a) educate if the questions are broadly related to speech and language development and academic achievement, (b) consult if the questions are more specific and connected to an individual student or instructional practice, or (c) assess if someone at school or home suspects a disability.

## ***Roles and Responsibilities*** **Articulation Differences and Disorders**



# Education

Education about the nature of speech and language development generally occurs in three different venues: large group, small group, and individual. In order to provide information to a large group, the SLP may make a brief presentation or conduct a more-in-depth workshop to staff or at parent meetings. Speaking to teachers during a regularly scheduled monthly staff development meeting is an effective way to provide basic information across grade levels. SLPs who schedule this type of presentation early in the year report an increase in teacher awareness about the developmental nature of speech acquisition and a decrease in inappropriate referrals for consultation and assessment.

Providing information at grade level meetings is another effective and focused way of strengthening the knowledge base of early elementary teachers about the nature of speech development. SLPs who attend kindergarten, first and second grade level meetings are able to give more detailed information about how to determine developmental levels, adjust classroom instruction to accommodate developmental levels, convey information to parents, promote acceptance of speech differences in the classroom, and spot speech problems.

Educating individual parents and teachers is the least efficient way to provide information. However, given scheduling constraints, it may be necessary to do so occasionally.

The majority of this section's handouts are designed to help SLPs share information with different audiences. The exception is Best Practices in Speech-Language Pathology. This page summarizes current thinking in the area of speech differences and disorders and is intended to build the SLP's fund of information about the subject. Contact Transdisciplinary Services to obtain a copy of the PowerPoint presentation, "Sharing Information about Speech Development," for use at site presentations. Additional educational resources are available online at [www.csha.org](http://www.csha.org) and [www.asha.org](http://www.asha.org).

## Speech Assessment and Intervention

### Best Practices Guidelines for Articulation Impairments

Fact	Practice
Differences are frequently developmental.	Check the developmental age chart before recommending assessment.
Lateral /s/ is not developmental.	Intervene at any time.
The speech normalization boundary is 8.5 years.	Begin instruction no later than 7.5 years.
The typical time to change a speech difference is 15-20 hours.	Consider offering initial services of 20 hours, allowing 3 hours for absences.
The typical frequency rate is two times a week for 30 minutes.	Offer block sessions of two times a week for 30 minutes for 20 weeks, or 20 hours a year.  Do not include pick-up or record-keeping time in the 30-minute total.
Correct placement is essential to progress.	Be skilled in a range of elicitation methods.
Mass practice is essential to progress.	Each student should produce a minimum of 150 correct productions a session. Schedule no more than four students per group. All students should be engaged in every moment of instruction. Each student should practice a minimum of 5 minutes, five days a week. Trained adults can guide the additional practice time.
Cognitive monitoring of production is essential to progress.	Build cognitive monitoring from the first session. Ask all students in group to monitor their own and each other's productions.
There is no research evidence that oral motor exercises improve speech production.	Differentiate between general oral motor exercises and placement methods that promote positioning of the articulators for specific sound production.
There is no research evidence that articulation disorders impact academic achievement.	Provide careful documentation showing the effects on educational progress.

## **What Parents Should Know About Speech Development**

Parents should know enough about speech development to facilitate sound acquisition as their children learn to communicate. They will also want to know what is normal development, how to get their questions answered when they have concerns, and when it is time to seek professional help. This article is designed to give parents the information they need about speech development.

### **Nature of Normal and Atypical Speech Development**

Talking takes time to develop. In the early years, parents and other caregivers facilitate development by providing rich opportunities for communicating. Children experiment with speech and language in nurturing social environments. They learn how to use language as a tool to express themselves, to get their needs met, and to develop satisfying relationships.

The basic goal of all communication is to transmit meaning. As children focus on making meaning, the miraculous innate ability to speak springs into action. The brain automatically supplies the speech and language required to bring the intended message to life. This is important to know for three reasons: (1) the child is thinking about meaning, not individual sounds; (2) the caregiver serves a critical role in speech acquisition; and (3) each child follows a unique developmental timetable.

#### **The child is thinking about meaning, not sounds.**

The earliest reward for communication is getting what we want. A parent gives a child food, toys, attention, and love. As long as the parent understands what is being said and responds appropriately, the speaking moment is a success for the child. Correct sound production takes a back seat to the message, and rightfully so. Parents intuitively accept mispronounced sounds with minimal attention. At most, they repeat the misarticulated word, saying it correctly. Eventually, typically developing children with normal hearing shape their sounds so that the sounds match the adult model. This happens gradually over a long period of time as a result of substantial input from competent speakers. Some children are slower acquiring sounds. Some children need more explicit input. Some children have an as yet unexplained, neurological difference that makes speech acquisition difficult. Most children will acquire the sounds of their language without any special attention by the time they are eight years. A few children will require professional help.

#### **The caregiver serves a critical role in speech acquisition.**

Parents and other caregivers facilitate speech acquisition in a dramatic interactive process. As parents listen, talk, and play with their child, he or she babbles, coos, invents words, puts words together, and eventually carries on conversations. The interaction is intimate. It involves facial expression, touch, gestures, and gaze. The parent and the child are engaged in a dance of sounds, syllables, words, and ideas. Scientists call this “motherese” (although “parentese” might be a better term, since it acknowledges the critical role that fathers play). The amount of time the child spends engaged in verbal interaction with a devoted caregiver and the quality of the interaction are powerful indicators of a child’s future communication ability. Parents and caregivers can make a difference.

#### **Each child follows a unique developmental timetable.**

Every speech-language pathologist (SLP) knows that there is a huge variation in the time it takes for children to learn to talk. Some children are fast to talk; some are slow. It is natural for parents to wonder how their child’s development compares to that of other children. Research in the area of speech and language provide guidelines for speech acquisition ages. These are developmental ranges meant to help parents, teachers and speech-language pathologists make informed decisions. In a comprehensive study, researchers found that the final age of acquisition, called the speech normalization boundary, is 8.5 years. This means that sound differences persisting past 8.5 years are not likely to spontaneously correct.

Age of Acquisition	Consonant Sounds
2–3	<i>p, b, m, h, w, d, vowels</i>
3–4	<i>y, n, k, g, t, f</i> (initial)
4–5	<i>l</i> (initial), <i>th</i> (voiced)
5–6	<i>f</i> (final), <i>v, l</i> (final), <i>sh, ch, j</i>
6–7	<i>ng, s, z, consonant and vocalic r</i>

### Typical Development, Differences and Disorders

When children are slow to develop speech or produce sounds that are noticeably different from children of the same age, parents generally become concerned. They seek information about what is normal and what is atypical. Consultation with a speech-language pathologist often satisfies this need for information. Here are typical questions and answers.

**What is meant by “typically-developing speech”?** This means that children produce sounds at expected ages and are intelligible when compared to other children their age. The age thresholds are set high enough that slow talking children are not inappropriately identified. Many typically developing children make sound errors at some time in their development.

**What is a speech difference?** *Speech difference* is a neutral term used to describe a sound production that does not match that of a Standard English sound. The difference might be due to maturation, a production unique to the individual, a dialect, or an artifact of learning English as a second language. Speech differences include sound substitutions (*s/sh*), distortions (a lisp), additions (usually an extra vowel), and omissions. Speech that is unique to the individual but does not significantly affect intelligibility or attract adverse attention is considered a speech difference.

**What is a speech disorder?** A *speech disorder* is the impairment or atypical development of a sound or group of sounds that results in reduced speech intelligibility. The child substitutes, distorts, adds, or omits sounds at an age when the sound should be produced correctly. Many speech distortions, such as a mild lisping *s*, do not reduce intelligibility.

Speech production disorders sort into one of the three following major categories: articulation deficits, phonological deficits, and apraxia.

**Articulation deficits.** The child incorrectly produces or omits one or more of the following sounds: *l, s, z, ch, j, sh, r, or th*. The effect on communication will depend on the type, severity, and number of errors. Identification of this disorder is generally made between the ages of 5 and 8. Most children respond well to intervention, which typically lasts 15 –20 hours. No scientific research links an articulation deficit with success or failure in the academic curriculum. An articulation disorder can co-occur with giftedness, language and learning disabilities, and retardation. The causes are varied and may be linked to transient hearing loss due to otitis media (frequent ear infections) or allergies; structural or functional problems with the lips, teeth, tongue, or hard palate; or a medical condition such as cleft palate or cerebral palsy. For many children, the cause is unknown.

**Phonological deficits.** The child incorrectly produces classes of sounds, typically substituting earlier-developing sounds for later-developing sounds and consistently omitting sounds. Children with phonological deficits often substitute *t/k* and *d/g* and visa versa. They frequently omit *s* in blends so *stamp* becomes *tamp* and *snake, nake*. Phonological deficits usually seriously affect intelligibility. Identification is generally made between three and five years. Most children respond well to intervention, which can take several years. There is substantial research correlating phonological disorders with later difficulty learning

to read. Early intervention is important with this population. The cause is most frequently linked to transitory hearing loss due to colds, ear infections, and allergies.

**Apraxia.** The child incorrectly produces sounds, sometimes consistently and sometimes randomly. Substitutions and omissions are most common. Speech rate and rhythm is also affected. Initially, intelligibility is usually very poor. Identification is typically made between the ages of three and five, although it can be later. The diagnosis is provisional in children who produce sentences shorter than three words. Intensive, early intervention yields good results. Many children with apraxia also have language and learning difficulties. Apraxia is impairment to the neurological motor planning center for speech.

### **Eligibility and Dismissal Criteria for Special Education Due to an Articulation Disorder**

The California Code of Regulations (5CCR3030) defines *articulation disorder* as reduced speech intelligibility and/or an inability to use the speech mechanism. The code also states that “an abnormal swallowing pattern alone does not meet criteria for articulation disorder.” In order to fulfill eligibility requirements for speech and language services the atypical speech behavior must meet all of the following three criteria:

- ✓ Significantly interferes with communication
- ✓ Attracts adverse attention
- ✓ Adversely affects educational performance

Dismissal occurs when the child no longer requires special education services, or the IEP team decides the child no longer benefits from the services.

A child with a speech deficit that mildly reduces intelligibility who does not meet these three criteria is not eligible for special education speech services.

### **General Strategies to Facilitate Speech Acquisition**

Parents and caregivers can promote speech and language acquisition in a variety of ways that can be easily integrated into the daily routine. The best strategies are to talk and read to the child often. Listen attentively. Describe daily events in vivid detail. Encourage all attempts at speaking. Read together often. The amount of early exposure to books and reading is the greatest predictor of educational success. See *Helping Your Child Pronounce Sounds* for specific suggestions about facilitating speech production.

### **Continuum of Speech Services in San Diego City Schools**

San Diego City Schools provides strategies, classes, and special education services for students with speech differences and disorders. If you have questions about these services, contact your neighborhood school for additional information.

#### **Helping children with differences**

##### *Developmental Differences*

Children with developmental differences are given the time and support to acquire knowledge, strategies, and skills according to their own timetables. Teachers identify these children early in the year, provide appropriate instructional support, and monitor their development. If you have questions, contact your child’s classroom teacher.

##### *Dialects*

District policy is to respect the linguistic differences of all children. The educational system in the United States uses Standard English, but some students use a variation of English at home and in their local community called a dialect. Examples include African American English, Southern English, and Spanish-influenced English. The district requires that teachers provide instruction in Standard English to all children as part of the literacy framework. The

goal is to prepare children to participate in the economic, political, and social systems of the United States. While students are expected to learn and use Standard English, no child is penalized for using a dialect at school. If you have questions, contact your child's classroom teacher.

### *English Learners*

Teachers support students acquiring English in the general education classroom using a variety of specialized language strategies. The district provides a range of opportunities for these students. If you have questions, contact your child's classroom teacher.

### **Serving children with mild deficits**

Many students mispronounce sounds but are intelligible to all their communication partners, enjoy good relationships with their peers, and perform in the average educational range. For some of these children, their mispronunciation might be considered a difference; for others, a mild deficit or disorder. None of them are eligible for special education services. San Diego City School's Office of Instructional Support provides Speech Improvement classes for these children. These small group classes are offered at each site and taught by SLPs. The SLP provides an intervention program based on the most current best practices in the field of speech-language pathology. Instruction typically lasts for 20 hours. Children are expected to attend regularly and complete homework assignments. Parents are encouraged to work with their children, and the SLP provides training in how to practice at home. Children are enrolled in the program at the discretion of the site administrator and the SLP.

### **Serving children with disorders**

A few children show mispronunciations that result in poor speech intelligibility. The errors are so significant that they attract excessive attention to the individual. The teacher has evidence that the articulation impairment is affecting educational progress. The Special Education staff assesses these children to determine the existence of a disability and then to determine eligibility. An Individualized Education Plan (IEP) is developed. If the child is eligible, the SLP provides intervention for the articulation disorder. These children may attend the Speech Improvement Class at the site.



## **What Teachers Should Know About Speech Development**

Every teacher will have at least one student with a speech difference sometime during his or her career. These differences might be due to a developmental lag, a dialect, a consequence of second language acquisition, or a factor that is unique and intrinsic to the child. Whatever the cause, teachers are expected to facilitate speech acquisition and find help for students whose productions exceed normal limits. This article is designed to help teachers support students who have sound differences in their classroom and make appropriate referrals to the school's speech-language pathologist.

### **What every teacher should know**

Teachers must know enough about speech development to communicate effectively with parents about the issue, support students who have speech differences, and make appropriate referrals to the speech-language pathologist for consultation and evaluation. Teachers should know:

- ✓ How sounds are acquired.
- ✓ The difference between typical and atypical errors.
- ✓ Which sounds their students should be able to pronounce.
- ✓ The impact of sound development on literacy.
- ✓ How to apply simple strategies that will support speech development.
- ✓ The eligibility requirements for special education services in the area of articulation development.
- ✓ What speech services are available to students.
- ✓ When to ask the speech-language pathologist for a consultation and when to ask for a screening or evaluation. Consultation is a part of the SLP's responsibility to general education, while a screening constitutes a referral to special education. Consult with the site speech-language pathologist before you make a referral for a special education screening or full assessment related to a speech sound.
- ✓ How to talk to parents about sound development and accessing the help of the school speech-language pathologist.

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Talking takes time to develop. In the early years, parents and other caregivers facilitate development by providing rich opportunities for communicating. Children experiment with speech and language in nurturing social environments. They learn how to use language as a tool to express themselves, to get their needs met, and to develop satisfying relationships.

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When children enter kindergarten they are expected to start thinking about sounds and using them to perform simple literacy operations: associate sounds with letters, identify sounds in different positions of words, blend and segment sounds, and rhyme. These kinds of tasks require phonological (sometimes called phonemic) skills. Some children with sound differences struggle to acquire these skills, while other children have no problem at all. There are ways of determining which children are at risk for later phonological problems.

### **The caregiver serves a critical role in speech acquisition.**

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By the time most children enter school, their sound systems are comparable to the adult model. Some typically developing children may still be sorting out how to make a few sounds, but by and large they are ready to learn to read and write. Teachers can continue to facilitate the sound acquisition by using a few simple strategies.

### **Each child follows a unique developmental timetable.**

Every speech-language pathologist knows that there is a huge variation in the time it takes for children to learn to talk. Some normal children are fast to talk; some are slow. It is natural for parents to wonder how their child’s development compares to that of other children. Research in the area of speech and language provide guidelines for speech acquisition ages. These are developmental ranges meant to help parents, teachers and speech-language pathologists make informed decisions. In a comprehensive study, researchers found that the final age of acquisition, called the speech normalization boundary, is 8.5 years. This means that sound differences persisting past 8.5 years are not likely to spontaneously correct.

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**Apraxia.** The child incorrectly produces sounds, sometimes consistently and sometimes randomly. Substitutions and omissions are most common. Speech rate and rhythm is also affected. Initially, intelligibility is usually very poor. Identification is typically made between the ages of three and five, although it can be later. The diagnosis is provisional in children who produce sentences shorter than three words. Intensive, early intervention yields good results. Many children with apraxia also have language and learning difficulties. Apraxia is impairment to the neurological motor planning center for speech.

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Dismissal occurs when the child no longer requires special education services, or the IEP team decides the child no longer benefits from the services.

A child with a speech deficit that mildly reduces intelligibility who does not meet these three criteria is not eligible for special education speech services.

## **General Strategies to Facilitate Speech Acquisition**

Teachers can promote speech and language acquisition in a variety of ways that can be easily integrated into the daily classroom routine. The best strategies are to listen attentively, encourage all attempts at speaking, show the students how to make a specific sound, provide opportunities for practice, and reinforce correct production. See *Helping Students Pronounce Sounds* for specific suggestions about facilitating speech production.

## **Continuum of Speech Services in San Diego City Schools**

San Diego City Schools provides strategies, classes and special education services for students with speech differences and disorders.

### **Helping children with differences**

#### *Developmental Differences*

Children with developmental differences are given the time and support to acquire knowledge, strategies, and skills according to their own timetables. Teachers identify these children early in the year, provide appropriate instructional support, and monitor their development.

#### *Dialects*

District policy is to respect the linguistic differences of all children. The educational system in the United States uses Standard English, but some students use a variation of English at home and in their local community called a dialect. Examples include African American English, Southern English and Spanish-influenced English. The district requires that teachers provide instruction in Standard English to all children as part of the literacy framework. The goal is to prepare all children to participate in the economic, political, and social systems of the United States. While students are expected to learn and use Standard English, no child is penalized for using a dialect at school.

#### *English Learners*

Teachers support students acquiring English in the general education classroom using a variety of specialized language strategies. The district provides a range of opportunities for students.

### **Serving children with mild deficits**

Many students mispronounce sounds but are intelligible to all their communication partners, enjoy good relationships with their peers, and perform in the average educational range. For some of these children, their mispronunciation might be considered a difference; for others, a mild deficit or disorder. None of them are eligible for special education services. San Diego City School's Office of Instructional Support provides Speech Improvement classes for these children. These small group classes are offered at each site and taught by SLPs. The SLP provides an intervention program based on the most current best practices in the field of speech-language pathology. Instruction typically lasts for 20 hours. Children are expected to attend regularly and complete homework assignments. Parents are encouraged to work with their children, and the SLP provides training in how to practice at home. Children are enrolled in the program at the discretion of the site administrator and the SLP.

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## Helping Your Child Pronounce Sounds

Children may mispronounce sounds until the age of eight years. Parents can facilitate pronunciation of speech sounds by providing many opportunities for the child to hear and say the sound correctly. Since hearing affects sound acquisition, be sure to have your child's hearing screened regularly.

- ✓ Use speech that is clear and easy for your child to follow.
- ✓ Repeat what your child says, using correct sounds. Never imitate incorrect speech.
- ✓ Avoid baby talk that uses sounds incorrectly.
- ✓ Make a picture book of interesting pictures containing a misarticulated sound. Have fun perusing the book and talking about the pictures. Be sure to say the words with the target sound frequently. Stress the sound ever so slightly, but keep your production natural.
- ✓ Sing songs and recite poems and nursery rhymes that contain the target sounds.
- ✓ Select four or five common household words containing the target sound and use them frequently during the day.
- ✓ Show your child how to make the sound, especially if it is a visible sound like *l*, *s*, *ch*, *j*, or *th*. Use this method sparingly to avoid frustration.
- ✓ Encourage talking. If the child is unintelligible, try to determine the meaning from context. Whenever possible, avoid asking the child to repeat what he or she has just said. This will reduce frustration.
- ✓ If your child has many misarticulations, focus on one or two sounds for a few weeks at a time.

## Helping Students Pronounce Sounds

Typically developing students may mispronounce sounds until the age of eight. Teachers can facilitate standard pronunciation by providing many opportunities for the student to hear and say the sound correctly. Be sure that hearing is screened annually, since it affects sound acquisition.

- ✓ Encourage students to participate in all speaking opportunities in the classroom.
- ✓ Promote respectful acceptance of speech differences in the classroom.
- ✓ Show students how to make the sound correctly. Either instruct the entire class or show an individual student during a private conference. Consult with your site's speech-language pathologist about how to describe the positions for each sound.
- ✓ Give students a list of words that contain the target sound in different positions. Words from the classroom word wall are ideal. Show students who need help how to pronounce each word. Give positive feedback for correct ("You put your lips just right.") and incorrect ("Next time spread your lips more, nice try.") productions.
- ✓ Select five target words and ask students to draw or find a picture for each word. Write the label below each picture. Have the students display the words. Encourage frequent practice during the day.
- ✓ Give students a list of simple target words and, after showing them how to make the sound, arrange for them to read the list every day with an adult in the classroom. Train the adult to give positive feedback. Change the list to reflect growing ability.
- ✓ Tape-record students reading either a list or a passage. Give them a copy of the material and ask them to mark the sounds that were produced correctly.
- ✓ Underline words in a passage that contain the target sound. Ask the student to read the marked passage during guided and shared reading. Give a prearranged silent acknowledgement at the end of the reading. Thumbs up for a mostly correct reading, thumbs sideways for a good attempt that needs more work.

# Consultation

Speech-language pathologists are considered experts in speech and language development at each site, so it is natural that administrators, teachers, service providers, and parents seek their advice about communication concerns. SLPs support classroom instruction and student achievement by helping staff and parents solve problems concerning speech and language issues. Consultation to site staff about general education communication issues is different from screening, assessing, or consulting about a student with an IEP for the following reasons:

- ✓ Its purpose is to help the general education teacher identify and address language strategies and skills in the classroom.
- ✓ It is informal and one of the SLP's responsibilities to general education.
- ✓ It relies primarily on narrative observation of students engaged in authentic classroom instruction.
- ✓ Students are never singled out in the process.
- ✓ It does not require parent permission, although if there are concerns about a specific student, parents should always be informed.
- ✓ It is not done if anyone has sufficient evidence about a student's performance to lead him or her to suspect a disability. Students with suspected disabilities should be referred for a special education evaluation. Consultation can help teachers and parents determine if the evidence is sufficient to warrant suspicion.

Here's how the consultation process works: The SLP gathers information by observing classroom instruction, reviewing records, and talking to the concerned adults. The SLP then provides descriptive feedback about the observations and helps develop and evaluate options that the adults might pursue. These options could include monitoring progress of an individual student or group of students, recommending wholesale or specific changes to classroom instruction, suggesting additional instructional support, or making a referral for a special education evaluation. The SLP checks back periodically (every two or three months) with the concerned adults to offer additional support.



### Observing in the Classroom

There are three types of observations: narrative, anecdotal, and participant.

**Narrative.** The SLP operates as a passive observer who simply watches and records. The SLP takes detailed notes during the observation. In this type of observation, the SLP has the opportunity to write a narrative about the observations and tends to focus more on the context, as there is more time to observe. Sometimes a narrative observation will turn into a participant observation.

**Participant.** The SLP may take part in the activity being observed. The observer may serve as a helper or in a supportive role to the leader of the activity. Since the observer is participating, the notes taken may be shorter and more “cryptic” in nature. Sometimes the notes serve as a “memory book” for the observer. During the participant observation, the observer creates field notes, which she or he should expand on soon after the observation.

**Anecdotal.** Anecdotal observations are “slices” of the life of the student in the classroom or other relevant setting. The observations describe what a child does, giving many examples, but to be useful as an assessment tool, they should be factual and nonjudgmental. They should be accurate observations of what a child is doing, written in a brief narrative form. The examiner may ask a parent, teacher, or teacher’s aide to conduct the anecdotal observation. Give the data collector a clipboard and paper. Ask him or her to do the following: “Over the next week, if Student X does or says something that ‘catches your ear,’ ‘grabs your eye,’ or ‘gets your attention,’ related to sounds and speaking and you have the time, write it down. Note your name, the date, the time, and the context as well.” If possible, show the observer some anecdotal observation records and collect the observations promptly after they are made.

Teacher \_\_\_\_\_ Student \_\_\_\_\_ Date \_\_\_\_\_

Start time \_\_\_\_\_ End time \_\_\_\_\_

### **Articulation Focused Observation Record Form**

*Discover the unexpected! Discover the important!*

<b>Behavioral Observations</b>	<b>Interpretations/Hypotheses</b>
What was the context (e.g., what type of lesson, purpose of lesson, how are students situated, what is the teacher doing)?	
What is the student you are observing doing and saying (e.g., reactions, and interactions with teacher and other students, elements of sound production)?	
What are the other students doing (e.g. reactions, interactions with teacher and other students)?	
Any other observations about the student's language, social interactions and academics?	

**Articulation Focused Observation Record Form (page 2)**

Behavioral Observations	Interpretations/Hypotheses
Any other observations about the student's speech?	
<p>How well did the student pronounce the following sounds in spontaneous speech?</p> <p><i>l</i></p> <p><i>s/z</i></p> <p><i>sh</i></p> <p><i>ch/dz</i></p> <p><i>r</i></p> <p><i>th, <u>th</u></i></p> <p>Other</p>	
If you were a participant observer, what did you discover about sound production?	

## **Request for Speech Consultation – Teacher Form**

Complete and return this form to request a consultation. Please perform all classroom observations without isolating or calling undue attention to any individual.

### **Background Information**

Student \_\_\_\_\_ Birthdate/Age \_\_\_\_\_ Date \_\_\_\_\_

School \_\_\_\_\_ Teacher/Room \_\_\_\_\_

Speech Concerns \_\_\_\_\_

Language Concerns \_\_\_\_\_

\_\_\_\_\_

Medical or Hearing Concerns \_\_\_\_\_

Academic Concerns \_\_\_\_\_

\_\_\_\_\_

When did you first suspect a speech or language difference? \_\_\_\_\_

When did you discuss your concerns with the parents, and what were the reactions?

\_\_\_\_\_

Is the student known to the SST/IST? \_\_\_\_\_

What other special services does this student receive, if any? \_\_\_\_\_

Does the student seem aware of the difference? \_\_\_\_\_

How do other students react to this student? \_\_\_\_\_

What have you done to accommodate the difference? \_\_\_\_\_

# Assessment and Intervention

## **Assessments and Refusals**

If a concerned adult, usually the parent, suspects a speech disability and requests a special education evaluation, the SLP responds by accepting the referral and beginning the assessment process or refusing the referral and explaining the reasons for doing so in writing. The SLP makes this decision after consulting with the parent and the classroom teacher using the procedures described in the previous section. Contact a senior SLP to obtain the district's refusal form and learn more about the process.

In order to show a disability, the SLP must document the presence or absence of three specific eligibility criteria: reduced speech intelligibility that (1) significantly interferes with classroom communication, (2) attracts adverse attention to the student, and (3) adversely affects educational progress (5 CCR 3030—Eligibility Criteria). Specific assessment procedures and tools are detailed in the next section.

## **No Disorder**

A student with a speech difference due to developmental lag, dialect, or acquiring English as a second language would not meet these criteria and, in the absence of any other evidence, would not be eligible for speech services. In any of these cases, the SLP would help the concerned adult understand that the difference is within the range of normal development.

## **Mild Disorder but Adequate Academic Performance**

Many students may have a mild speech difference or impairment that is not developmental but clearly does not affect educational progress. In such cases, the SLP, parent, and administrator might choose to accept the difference without intervention; enroll the student in a Speech Improvement Class; or proceed with the special education evaluation, expecting that the likely outcome would be the development of a 504 Plan.

## **Mild-Moderate Disorder and Inadequate Academic Performance**

A few students may have multiple articulation errors that are not developmental and that significantly reduce intelligibility and attract undue attention. If these students are also struggling in the classroom, a full special education evaluation that examines cognitive, academic, and language development seems indicated. Presently, there is no scientific research that demonstrates a causal relationship between articulation deficits and academic achievement. However, poor intelligibility coupled with low academic performance may signal the presence of a disability other than speech production.

Although many students who have mild impairments may not be eligible for special education services, some could benefit from a speech improvement class offered as part of their general education program but taught by a SLP, sometimes with support from a trained adult.

## **Dismissal Criteria**

Introduce these criteria during the consultation phase or early in the assessment phase. This ensures that the parents and teachers have been informed and have a reasonable expectation about the length of intervention. Dismissal is indicated when the student:

- ✓ No longer requires intervention to make educational progress.
- ✓ Has adequate intelligibility.

- ✓ Meets chronological or developmental expectancies for speech production.
- ✓ Is at grade level academically.
- ✓ Has not made expected progress in six months despite intensive evidence-based intervention.

As with any movement for dismissal, the SLP must hold an IEP. Follow these steps:

1. Reevaluate, seeking input from the team including the parents.
2. Write an assessment report.
3. Discuss evidence with the team.
4. Recommend dismissal and try to achieve a consensus.

## **II. Assessment Procedures**





# Screenings

Screenings are part of the special education IEP evaluation process and, like all evaluations for special education, require parent permission. SLPs screen when they suspect a speech disability but require additional evidence, usually pertaining to the severity of the impairment and its effect on educational progress, in order to proceed with a full descriptive and interpretive evaluation. For a screening, the SLP might ask the student to repeat target words or perform an automatic speech act, name pictures, or read sentences and passages containing the sound of interest. The SLP might also ask the parent and teacher to complete intelligibility and severity rating scales and informally analyze a brief speech sample during a classroom observation.

A screening may be indicated if the SLP suspects that the speech pattern is within normal boundaries but wants to rule out dialectical, second language acquisition, phonological, or mild apraxia factors.

At the conclusion of the screening, the SLP determine if the collected information is sufficient to reach a decision or if more testing is necessary. If the SLP decides to do more testing, the new procedures must be added to the assessment plan, and the parent must give written permission.

## **Speech Questionnaire**

*Parent Form*

Student's Name \_\_\_\_\_ Date \_\_\_\_\_

Name of Parent Completing the Form \_\_\_\_\_

Please answer the following questions about your child's speech difficulties. Use the following rating scale for questions 1–7. Write the number that corresponds with your opinion in each blank.

0	1	2	3	4	5
Never	Rarely	Sometimes	Often	Always	NA

- \_\_\_\_\_ 1. Do you understand your child's conversational speech?
- \_\_\_\_\_ 2. Do you understand your child's production of single words?
- \_\_\_\_\_ 3. Do others understand your child's speech when talking face-to-face?
- \_\_\_\_\_ 4. Do others understand when your child talks on the telephone?
- \_\_\_\_\_ 5. Do others understand when your child talks on a topic familiar to the listener?
- \_\_\_\_\_ 6. Do others understand when your child talks on a topic unfamiliar to the listener?
- \_\_\_\_\_ 7. Do others understand when your child talks in a quiet environment?
- \_\_\_\_\_ 8. Do others understand when your child talks in a noisy environment?
9. Is your child aware of his/her speech differences? \_\_\_\_\_ If so, please explain.
- \_\_\_\_\_
10. Does your child react in any way to the speech differences? \_\_\_\_\_ If so, please explain.
- \_\_\_\_\_
11. Do others react to your child's speech differences? \_\_\_\_\_ If so, please explain.
- \_\_\_\_\_
12. Describe your concerns about your child's speech.

## **Describing Speech Misarticulations**

### ***Teacher Questionnaire***

1. Does this student misarticulate sounds when talking? **Yes** **No**
  
2. In general, how intelligible is the student to you?  
**Unintelligible**
**Fairly Intelligible**
**Highly Intelligible**
**Completely Intelligible**
  
3. Is the student's academic performance satisfactory?  
☐ Yes, the student meets grade level standards.  
☐ No, the student does not meet grade level standards.
  
4. If no, in which of the following areas is the student performing below grade level?  

<b>Speaking</b>	<b>Reading</b>	<b>Writing</b>	<b>Spelling</b>	<b>Math</b>
-----------------	----------------	----------------	-----------------	-------------
  
5. Does the misarticulation(s) have a *significant* adverse affect on any of the areas that are below grade level?  
**No**
**Yes**
  
6. If yes, identify each area of impact and tell how the misarticulation affects academic performance.  

Area _____	Impact	_____
Area _____	Impact	_____
Area _____	Impact	_____
Area _____	Impact	_____
  
7. What accommodations for the misarticulation(s) have you made to support the student in each affected academic area?  


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8. What have you done to correct the misarticulation(s)?  


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9. Do classmates react negatively to the misarticulations? **No** **Yes**
  
10. If yes, describe the negative reactions and their impact on the student.  


---
  
11. What have you done to stop the negative reactions?  


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12. In your judgment, does this student have an articulation problem that adversely affects educational progress in a significant way? **Yes** **No**

# Full Speech Assessment

## **Getting Started**

A full speech assessment requires that a SLP collect descriptive data using multiple respondents, tools, and contexts. The SLP answers the following types of questions to collect and explain the speech and academic data.

### **Descriptive**

- ✓ What is the speech pattern?
- ✓ What are the developmental expectations?
- ✓ How intelligible is the speaker?
- ✓ How severe is the difference between this student and a typical peer?
- ✓ Does the speech pattern significantly interfere with communication?
- ✓ Does the speech pattern attract adverse attention?
- ✓ What are the student's academic performance levels in reading, writing, and speaking?
- ✓ Is the student aware of his or her speech differences or patterns?

### **Explanatory**

- ✓ Is the sound pattern due to developmental or dialectal factors or is it outside normal developmental boundaries?
- ✓ Is the sound pattern a result of learning English as a second language?
- ✓ Is the negative attention a normal reaction that might be expected from any listener or is it due to inadequate classroom management techniques?
- ✓ Does the speech pattern significantly interfere with educational progress? If so, explain how.
- ✓ Is the timing right for intervention?

## **Answering Descriptive Questions**

Procedures for collecting data related to each descriptive question are described below.

### **What is the speech pattern?**

The most authentic, valid, and time-consuming way to describe spontaneous speech production is to collect a 15-minute conversational sample and narrowly transcribe it using diacritical markers. Fortunately, the SLP needs less precise information to determine the presence or absence of speech disorder, eligibility for special education, and appropriate speech targets.

Interviewing parents and teachers, observing in different contexts, analyzing a brief spontaneous or structured speech sample, asking the student to repeat word or name pictures, and/or administering a standardized test will yield adequate descriptive information. Articulation disorders in school-age students are characterized by single or multiple errors (omissions, substitutions or distortions) of the following sounds: *l*, *s*, *z*, *ch*, *j*, *sh*, *r*, or *th*. Errors of other sounds generally indicate either a phonological or an apraxia disorder.

### **What are the developmental expectations for the sound(s)?**

Use developmental norms for order of sound acquisition to evaluate the student's productions. Developmental norms are statistical tendencies and considered guidelines. There is great variability in actual development. See Articulation Eligibility Profile—Female and Articulation Eligibility Profile—Male, at the end of this section. By age

6, most distortions are interdental or dental and often undergo improvement with age. Lateralization is not developmental, rarely improves spontaneously with age, and significantly reduces intelligibility. Intervention is warranted for lateralization patterns regardless of the student's age if the deficits meet the three eligibility criteria.

### How intelligible is the speaker?

There is no standard procedure for determining intelligibility. It is a perceptual judgment. Factors that influence intelligibility include the number and types of speech errors, the consistency of the errors, the frequency of occurrence of the error sound in the child's language, and the presence of phonological processes. Some authors suggest calculating the percentage of consonants correct (PCC), although there is a low correlation with intelligibility in a speech sample since some error types affect intelligibility more than others. For example, sound deletions reduce intelligibility more than distortions. Examiners typically count the number of words understood or the number of consonants correct in a 100-word sample and then estimate overall intelligibility using a rating scale.

#### Formula for Percentage of Consonants Correct (PCC)\*

$$\text{PCC} = \frac{\text{Number of correct consonants}}{\text{Number of correct plus incorrect consonants}} \times 100$$

Use the following scale and/or the Speech Intelligibility Interpretation Values found in the *Arizona Articulation Proficiency Scale, Third Revision (Arizona 3)* to determine overall speech intelligibility.

#### Intelligibility Rating Scale

Intelligibility	Estimate of Percentage of Consonants Correct
Good	>85
Mildly–moderately unintelligible	65–84
Moderately–severely unintelligible	50–64
Severely unintelligible	<50

### How severe are the phonetic differences?

Formal assessment measures, such as the *Goldman-Fristoe Test of Articulation-2*, the *Arizona 3* and the *Clinical Assessment of Articulation and Phonology* allow norm-referenced comparisons. The *Arizona 3* provides a severity rating scale based on the total score. The *Goldman-Fristoe Test of Articulation-2* and *Clinical Assessment of Articulation and Phonology* yield standard scores and percentile ranks.

### When do the errors significantly interfere with communication?

Most researchers recommend intervention when students are 1.0–2.0 standard deviations (SD) below the norm, moderately to severely unintelligible, or show significant negative social–emotional problems related to speech production. A score of –1.5 SD on a standardized test correlates with a moderate impairment and could reasonably be considered a “significant” difference.

### When do the errors adversely attract attention?

Some students experience a social penalty for speech production errors. Interview the parents, the teacher, and the student (when appropriate) and observe the student in a variety of communication acts to determine the nature and the extent of the penalty. Look for frequent requests for clarification, presence of speech avoidance, and negative reactions from listeners in important communication settings. Use Describing Speech Misarticulations: Teacher

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\* This table and following table: Shriberg, L., and Kwiatkowski, J. (1982) Phonological disorders III: A procedure for assessing severity of involvement. *Journal of Speech and Hearing Disorders*, 47, 256–270.

Questionnaire and Speech Questionnaire: Parent when determining the social value of the speech errors. (See the end of the Screenings section.)

### **When do the errors adversely affect educational performance?**

Phonetic errors rarely interfere with educational performance but may coexist with a learning disability. Students who avoid communication as a consequence of speech errors are at-risk for lower academic performance.

## **Answering Explanatory Questions**

Procedures are suggested below for collection data for each descriptive question.

### **Is the sound pattern due to developmental or dialectal factors?**

When determining the developmental ages for sound acquisition, consult the charts and forms at the end of this section. Review the charts and forms for examples of dialectal errors.

### **Is the sound pattern a result of learning English as a second language?**

Consult the Consonant Chart at the end of this section for sound patterns that speakers of Spanish and Asian languages commonly make when acquiring English.

### **Is the negative attention a normal reaction that might be expected from any listener or is it due to inadequate classroom management techniques?**

This is an important question about classroom management. Teachers who expect students to respectfully accept speech differences do not typically report that the difference attracts adverse attention. Obtain this information from interview and classroom observation. Consider asking an administrator to help you collect data, if you suspect the teacher needs help preventing teasing.

### **Does the speech pattern significantly interfere with educational progress? If so, explain how.**

Examine the student's report cards (subject grades and citizenship marks), standardized and teacher designed test scores, and teacher notes for evidence of educational impact. Use the Describing Speech Misarticulations: Teacher Questionnaire form to help you obtain evidence.

### **Is the timing right for intervention?**

Consider delaying intervention until the latest age of acquisition in the following situations:

- ✓ If the articulation errors are inconsistent, consider postponing the evaluation.
- ✓ If the student is stimuable for a sound, consider implementing a home program prior to direct treatment.
- ✓ If the student's upper incisors have not erupted, consider waiting until the dental support is available.

Consider intervening early in the following situations:

- ✓ If the child is self-conscious or the parent or teacher has serious concerns, consider a trial intervention.
- ✓ If the distortion is rare, such as lateralization, a grossly protruding tongue or pharyngealized /s, z/, an early evaluation may be warranted.
- ✓ When there are no indicators of pending spontaneous improvement and intelligibility is significantly reduced, an early evaluation may be indicated.

The speech sound normalization boundary is 8.5 years. The likelihood of changing the speech error decreases significantly past this age. Given that the average length of treatment is 20 hours, students with speech errors that interfere with communication should be considered for intervention by 7 years.

## **Designing the Assessment Plan**

Follow these steps as appropriate when collecting and analyzing data:

1. Collect a case history including medical, hearing, and developmental information.
2. Arrange for an audiological screening or testing; include impedance screening when possible.
3. Perform a brief oral-peripheral screening, looking at basic structure and function of the articulators.
4. Interview parents and/or teachers.
5. Observe in different contexts.
6. Gather information from rating scales, checklists, and protocols.
7. Administer and tape-record a standardized articulation/phonology test.
8. Collect and tape-record a spontaneous, connected speech sample.
9. Check for stimulability at the individual sound and word levels.
10. Make a preliminary judgment about intelligibility and severity.
11. Analyze and explain data.
12. Determine presence of disorder and eligibility.
13. Make recommendations.

### **Tips for Assessment**

- ✓ Be certain of your eligibility criteria before assessing.
- ✓ Develop a diacritical marking key and keep it with the articulation/phonology test that you use most often.
- ✓ Determine in advance whether phonological or traditional articulation testing is the most appropriate.
- ✓ Assemble materials and keep in a convenient location. Be sure to include picture cards, a wordless story, a mirror, a flashlight with extra batteries, tongue depressors, gloves, paper towels, small cups, a small jar of peanut butter, and lifesavers. A watch with a second hand is also helpful.
- ✓ Test in a quiet place with no distractions.
- ✓ Ask the student to repeat responses when necessary.
- ✓ Ask for imitative responses when the student is unable to respond spontaneously. Use delayed imitation when possible.
- ✓ Use simple, clear language. Begin directions with present-tense verbs.
- ✓ Use a tape recorder to verify transcriptions when necessary.
- ✓ Tell the student that he or she is going to give you information about his or her skills and speaking strengths. Encourage him or her to ask questions at any time.

## **Articulation Severity and Intelligibility Scales**

### **Articulation Severity Rating**

0	Mild 1	Moderate 2	Severe 3	Very Severe 4
normal	<ul style="list-style-type: none"><li>• 1–3 speech sounds</li><li>• stimuable</li><li>• noticeable to at least one other familiar listener</li><li>• may be inconsistent</li></ul>	<ul style="list-style-type: none"><li>• consistent</li><li>• 4 to 8 phonemes</li><li>• intelligibility may be affected</li></ul>	<ul style="list-style-type: none"><li>• more than 8 phonemes</li><li>• not all phonemes stimuable</li><li>• interferes with communication</li></ul>	<ul style="list-style-type: none"><li>• often unintelligible</li><li>• frustration, refusal to speak</li><li>• stimulability is difficult</li><li>• interferes with</li></ul>

				communication
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## **Intelligibility Rating**

0 100% to 91%	Mild 1 90% to 76%	Moderate 2 75% to 51%	Severe 3 50% to 25%	Very Severe 4 Less than 25%
readily intelligible	<ul style="list-style-type: none"> <li>• inconsistent</li> <li>• intelligibility depends on situation, topic, etc.</li> <li>• parents and others usually have only slight difficulty understanding</li> </ul>	<ul style="list-style-type: none"> <li>• intelligible if topic known</li> <li>• consistent difficulty with intelligibility with parents and other persons</li> </ul>	<ul style="list-style-type: none"> <li>• intelligible only infrequently if topic known</li> </ul>	<ul style="list-style-type: none"> <li>• intelligible only with single words</li> <li>• almost never intelligible</li> </ul>

## **The Articulation Eligibility Profiles**

### ***Using the Profile***

- Draw a heavy horizontal line corresponding to the student's chronological age. For students older than eight, write chronological age on the top line.
- Place an X on the heavy horizontal line for each phoneme not correctly articulated in any position.
- The space within the bars may be useful in noting the specifics regarding stimulability, position, discrimination, etc.

### ***Interpretation***

- An X above the top of the darkened phoneme bar indicates that the student's development of the particular phoneme is delayed from the expected age of developmental acquisition.
- Refer to the district's speech-language pathology eligibility criteria to determine eligibility.
- Include the profile in the student's special education container.



## **Articulation Eligibility Profile—Female**

**Name of test** \_\_\_\_\_ **SLP** \_\_\_\_\_

## Articulation Eligibility Profile—Male

Name of test \_\_\_\_\_ SLP \_\_\_\_\_

Student's Name \_\_\_\_\_ Age and Grade \_\_\_\_\_

## **ARTICULATION PERFORMANCE ASSESSMENT CHECKLIST**

### **Part 1: The Descriptive Phase**

Collect your data following the triangulation procedure: multiple assessors/respondents, contexts, and tools. A minimum of three from each area will insure validity.

1. List the names of the people that you interviewed and a brief description of their concerns.

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2. Check the type of observation you used. Give the date, context, and A brief description of findings.

#### Open

- ☐ Narrative \_\_\_\_\_  
☐ Participant \_\_\_\_\_  
☐ Anecdotal \_\_\_\_\_

#### Focused

- ☐ SDCS Speech Observation Form  
☐ \_\_\_\_\_  
☐ \_\_\_\_\_

#### Behavioral Sampling

- ☐ Analysis of spontaneous speech sample  
☐ Percentage of Consonants Correct  
☐ Intelligibility Rating  
☐ Severity Rating  
☐ Articulation Eligibility Profile  
☐ Pattern of Adverse Attention  
☐ Results of Oral-Peripheral Screening  
☐ \_\_\_\_\_

#### Rating Scales, Checklists, Protocols, and Rubrics

- ☐ SDCS Speech Questionnaire: Parent Form  
☐ SDCS Describing Speech Misarticulations: Teacher Form  
☐ Review of Grade Cards  
☐ \_\_\_\_\_  
☐ \_\_\_\_\_

#### Structured Probes

- ☐ Goldman Fristoe Test of Articulation 2  
☐ Arizona  
☐ Clinical Assessment of Articulation and Phonology  
☐ Stimulability  
☐ DRA  
☐ ARI  
☐ Nonsense Task \_\_\_\_\_  
☐ \_\_\_\_\_  
☐ \_\_\_\_\_

3. Did you use different assessment technologies, contexts, and people to ensure validity when collecting the data (triangulation)?

Different technologies used:

- ☐ Observation and Interview
- ☐ Behavioral Sampling
- ☐ Rating Scales, Checklists, Surveys, and Rubrics
- ☐ Structured Probes including standardized tests.

Different contexts of interests (read-aloud, shared or guided reading, partner talk, accountable talk, circle time, literature circle, cooperative group, oral presentation, free time, recess or lunch, structured or unstructured playground activity, activity in the speech room):

_____	_____
_____	_____
_____	_____

Different people (always include SLP as one):

_____	_____
_____	_____
_____	_____

4. What strengths and weaknesses did the pattern analysis reveal in the area of oral language?

Strengths (examples: intelligible speech; active communicator; accepted member of classroom community; meets or exceeds classroom standards for speaking, reading, and writing).

_____	_____
_____	_____
_____	_____
_____	_____

Weaknesses (poor speech intelligibility; passive or withdrawn communicator; difficulty forming relationships; struggles with classroom speaking tasks, reading or writing.)

_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____

5. What clusters did you uncover?

Strength clusters (intelligibility, socialization, speaking, reading, and/or writing.)

_____	_____
_____	_____
_____	_____

Weakness clusters (intelligibility, socialization, speaking, reading and/or writing)

_____	_____
_____	_____
_____	_____

## Part II. The Explanatory Phase

What did you decide was the cause of each articulation difference? Is it a difference due to developmental or dialectical factors, or is it a stable feature of the student's sound system? If it is a stable feature, does it significantly affect intelligibility, draw adverse attention, and interfere with educational progress? Use the following checklist of screens to guide your deliberation.

1. Is the articulation difference developmental? **YES** **NO**

- ☐ The sound difference is typical for the student's developmental age.
- ☐ The sound is stimulable and likely to self-correct.
- ☐ The student produces the sound correctly in some words.
- ☐ The sound difference is outside age expectancies or the speech normalization boundary of 8.5 years.
- ☐ \_\_\_\_\_

2. Is the articulation difference due to English language learning or a dialectical difference? **YES** **NO**

- ☐ The sound difference is related to the student's dialect.
- ☐ The sound difference is a factor of second language acquisition.
- ☐ The sound difference is due to a transfer error between the L1 and L2.
- ☐ The English sound is not in the student's primary language.
- ☐ \_\_\_\_\_

3. Is the articulation difference a disorder? **YES** **NO**

- ☐ The sound difference is atypical for all developmental ages.
- ☐ The sound is not stimulable and not likely to self-correct.
- ☐ The sound difference is outside the developmental age expectancy.
- ☐ The sound difference is outside the speech normalization boundary of 8.5 years.
- ☐ \_\_\_\_\_

4. Does the articulation disorder significantly interfere with intelligibility? **YES** **NO**

- ☐ The results of observations of classroom talk indicate poor intelligibility.
- ☐ An interview with the classroom teacher indicates poor intelligibility.
- ☐ An interview with the parent indicates poor intelligibility.
- ☐ An interview with the student indicates poor intelligibility.
- ☐ Analysis of a language sample indicates poor intelligibility.

5. Does the articulation disorder draw significant adverse attention? **YES** **NO**

- ☐ The results of observations of classroom talk indicate negative reactions from listeners.
- ☐ An interview with the classroom teacher indicates negative reactions from listeners.
- ☐ An interview with the parent indicates negative reactions from listeners.
- ☐ An interview with the student indicates negative reactions to speaking.
- ☐ \_\_\_\_\_

6. Does the articulation disorder have a significant adverse effect on educational progress? **YES** **NO**

- ☐ The results of a record review show below grade level performance in reading, writing, or spelling. (Circle one.)
- ☐ Evidence (Test scores, grades, portfolio assessment)
- ☐ An interview with the teacher indicates below grade level performance in reading, writing, spelling or speaking.
- ☐ An interview with the parent indicates below grade level performance in reading, writing spelling or speaking.

☐ \_\_\_\_\_

### Findings

- ☐ The student has an articulation difference, not a disorder. (You answered Yes to Question 1 and/or 2.)
- ☐ The student does have an articulation disorder, but it does not significantly affect intelligibility, draw adverse attention, and interfere with educational progress. (You answered Yes to Question 3 but No to Question 4, 5, or 6.)
- ☐ The student does have an articulation disorder, and it does significantly affect intelligibility, draw adverse attention, and interfere with educational progress. (You answered Yes to Questions 3, 4, 5, and 6.)

### Recommendations

- ☐ Monitor development.
- ☐ Assist teacher with classroom strategies.
- ☐ Assist parent with home strategies.
- ☐ Recommend for enrollment in Speech Improvement Class (includes teacher and parent strategies).
- ☐ Develop IEP and begin intervention in Speech Improvement Class.
- ☐ Develop 504 with classroom strategies only.
- ☐ Develop 504 and begin intervention in Speech Improvement Class.
- ☐ Other \_\_\_\_\_

# Special Populations

## **Dialectical and Bilingual Considerations**

The first step for an SLP when considering whether or not to assess linguistically different students in the area of articulation is to determine if the behaviors in question might be due to a real disorder or a language difference. SLPs who are familiar with the features of local dialects and non-English languages will find it easier to make this distinction.

If an English sound does not exist in a student's primary language, then a substitution, omission or distortion is likely due to learning a second language. (See the Consonant Chart at the end of this section.) If the sound does exist and the student substitutes, omits, or distorts it, he or she may be a good candidate for the Speech Improvement Class or for a special education referral. Students who show sound deficits in their primary language must meet the State of California's eligibility requirements for an articulation disorder in order to receive services.

## ***Bilingual Consultation***

Bilingual SLPs and aides are not available to assist with consultations. However, you may call Jennifer Taps, the Articulation Resource Center Coordinator, if you have a specific question.

## ***Initial and Three-Year Evaluations in Spanish***

Bilingual Spanish-speaking SLPs are available to assist with bilingual initial speech evaluations. Please fax a Request for Bilingual Assessment form to Transdisciplinary Services at (858) 573-5981. You can obtain the form from the program office or the *Speech-Language Pathology Handbook*.

## ***Bilingual Assessment for Languages Other than Spanish***

Please call Jeannette Higgs at (619) 725-7653 to arrange for interpreters in languages other than Spanish. Remember to prepare assessment procedures in advance, as the interpreter is not likely to be trained to assist with questions about speech and language development. Norms for tests standardized in English on English-speaking populations are not valid if translated into another language.





# Writing the Report, Goals and Services

The SLP records the evaluation findings and outcomes in the Assessment Report. In the report the SLP:

- ✓ Gives pertinent background information, including information about hearing.
- ✓ Describes the student's speech production strengths and weaknesses and explains the causes and effects of the weaknesses. Includes information about developmental level, dialect, second language learning, intelligibility, severity, stimulability, adverse attention, attempts by teacher to correct the misarticulation, and effects on educational progress.
- ✓ Determines whether or not a disorder exists
- ✓ If it does exist, describes its impact on intelligibility, adverse attention, and educational progress.
- ✓ Makes recommendations about eligibility, placement, intervention goals, and strategies.

See the Sample Articulation Assessment Report following. Contact Jennifer Taps, Articulation Resource Center, for an electronic report template. Articulation goals are available in the Encore IEP.

The IEP team determines the frequency and amount of special education and related services that a student requires to make progress toward achieving the IEP goals. In an educational setting, the average intervention time is set within one school year. This does not include the extended school year. If an extended school year is indicated, the frequency and amount of services, as well as a justification should be written into the IEP. Students with IEPs for single articulation errors rarely require an extended school year.

Services must be specified on page 1 of the IEP. IEP teams are free to select a service delivery model that is most suitable for the student's needs. Consider the following options:

SLP writes the number of minutes per session, the number of sessions per week and the number of weeks on the first page of the IEP (ex. 2, 30-minute sessions per week for 30 weeks). If the number of weeks is omitted, it is assumed that services will extend for 36 instructional weeks.

SLP writes the number of hours or sessions per year on the first page of the IEP.

Examples:

- # Sessions per semester or year (30, 30-minute sessions per year)
- # Hours per semester or year (20 hours per year)

## Sample Articulation Assessment Report

### Background

John Smith, age 6, is a first grade student at Kerry Elementary in San Diego. English is his primary language and the language of instruction. Mrs. Smith, John's mother, referred him for a speech evaluation. Her presenting concerns were speech intelligibility, how he views himself as a communicator, and spelling development. No language or other academic concerns were noted.

This is John's initial evaluation for special education services. He has no prior history of speech and language intervention. His medical history is unremarkable. Mother reports an occasional ear infection. The results of a hearing screening (9/04) were normal. There is no family history of speech and language problems or learning disabilities.

California Code of Regulations establishes eligibility criteria for special education services in the area of articulation development. The speech behaviors must **significantly** interfere with communication, attract adverse attention, and adversely affect educational performance.

### Testing Procedures

The school SLP described John's speech production using performance assessment technologies: interview, observation, ratings scales, checklists, behavioral sampling, and standardized testing. The SLP performed the following evaluative tasks:

- Reviewed school and medical records.
- Interviewed the parents, teacher and John.
- Observed John in the classroom during shared and guided reading, partner talk and free play, and on the playground during recess.
- Analyzed the results of parent and teacher questionnaires.
- Completed the Articulation Eligibility Profile.
- Measured speech intelligibility using the Intelligibility Rating Scale.
- Collected and analyzed a structured speech sample using *Pancakes for Breakfast*, by de Paola, 1978.
- Reviewed spelling work samples with the teacher.
- Administered a standardized articulation test, *Goldman-Fristoe Test of Articulation-2* (GFTA-2).
- Conducted a brief oral-peripheral examination.

### DESCRIPTIVE ANALYSIS

John's teacher, Mrs. Jones, and Mr. and Mrs. Smith reported mispronunciation of the /s/ sound. Mrs. Smith described it as slurred. Mrs. Jones noted he substituted [th] for /s/. Results of observation, analysis of the language sample, and standardized testing confirm the presence of a mild speech variance. John distorts /s/ and /z/. The production is frontalized and occurs in all word positions. He is stimutable for correct production in the initial position at the syllable and word levels. Using the Articulation Eligibility Profile—Male guidelines, John is not expected to correctly produce the sounds until age 7. Results of the GFTA-2 follow:

- [th, th] for the target sounds /s, z / in the initial/medial/final position of word.
- Standard Score of 82 and a Percentile Rank of 6. These scores fell below the average range.

The oral peripheral exam showed no structural differences. A functional tongue thrust appeared to co-occur. Currently, there is no research that a tongue thrust contributes to an articulation disorder.

### Intelligibility

Speech is completely intelligible in all speaking situations. While the distortion is consistent, it does not affect intelligibility. John scored in the mild range on the Intelligibility Rating Scale and on the Severity Rating Scale.

### Adverse Attention

There was no evidence during the observation or from the parent and teacher questionnaires that the speech difference attracted adverse attention. John is an active participant in all oral language activities. According to his parents and teacher, he enjoys good relationships with his peers. During the student interview, the SLP asked John about making the /s/ sound. He appeared unconcerned about the speech difference but said he knew about it because “my mom told me. She tries to help me make it right.”

### **Academic Performance**

Mrs. Jones stated that John performs at grade level in all language arts areas and meets all grade level standards. John uses inventive, phonetic spelling, which is appropriate for his developmental level.

### **INTERPRETIVE ANALYSIS**

John’s sound variance for /s/ and /z/ appears to be a developmental speech difference that does not affect communicative intelligibility, attract adverse attention, or impact educational progress. John does not meet eligibility requirements for special education speech services at this time.

The SLP will give the parents and the teacher suggestions for facilitating acquisition of standard sound production and discuss possible enrollment in the site’s Speech Improvement Class at the IEP meeting.

# Speech Improvement Class, IEP, or 504?

San Diego City Schools offers a Speech Improvement Class to students with speech deficits that are not due to developmental, dialectical, or second language acquisition factors. An SLP teaches the class using evidence-based practices developed for students with articulation disorders. A trained adult sometimes assists the SLP. Exercises for a home program are included and interested parents are trained in easy-to-use practice methods. Students can access the class in a variety of ways: by recommendation of the principal and SLP or as an outcome of the IEP or 504 process.

## **Description of Speech Improvement Class**

Classes may be offered before or after school or during the instructional day. Scheduling should not interfere with literacy instruction. Classes are typically offered twice a week for 30 minutes in a small group setting. While the SLP determines the goals, and plans and implements the curriculum, a trained adult may guide some lessons. Placement and practice methods are individualized for each student as appropriate. The SLP completes an entry and completion checklist for each participant.

Students are expected to complete daily practice assignments at home. SLPs work with classroom teachers and parents to reinforce and generalize skills and provide progress updates periodically. Classes generally last for 17–20 hours.

## **Recommendation by Principal and SLP**

Students with mild sound deficits that do not significantly affect intelligibility or educational performance, who are motivated to make speech changes, and whose parents give permission may enroll in the Speech Improvement Class upon the recommendation of the principal and the site SLP.

Parents and teachers often nominate candidates. After a classroom consultation, a SLP might determine there is insufficient evidence in the areas of intelligibility, adverse attention, and educational progress to suspect the presence of a speech disability that will meet eligibility requirements. No special education assessment is indicated. However, the student might benefit from the Speech Improvement Class. The SLP then confers with principal. If the student is likely to benefit from the class, the SLP calls the parent and offers the Speech Improvement Class. The parent signs and returns the Permission to Enroll in the Speech Improvement Class form. (A form is provided at the end of this section.) The student enrolls in the class when a place becomes available.

## **IEP Process**

Students who have a special education evaluation and are eligible for speech services access the Speech Improvement Class through the IEP process. The instructional design of the Speech Improvement Class is flexible and can usually accommodate the needs of students with IEPs. If a student is found ineligible for services at the IEP meeting, he or she may still enroll in the Speech Improvement Class.

## **504 Process**

Students who have a speech disorder that does not significantly affect education performance sometimes accesses the Speech Improvement Class as an outcome of the 504 process. Please see the Special Education Procedures Manual for additional information.

## San Diego City Schools Transdisciplinary Services

### **Permission to Enroll in the Speech Improvement Class**

San Diego City Schools offers a Speech Improvement Class for students with mild speech differences that affect the way they pronounce a sound. As you know from your discussion with the school's speech-language pathologist, your child has been invited to enroll in the class.

#### **About the Class**

The class is offered to general education students who have speech differences that do not significantly affect communication, self-esteem, and educational achievement. The class is scheduled so that it does not interfere with literacy instruction. Classes are typically offered twice a week for 30 minutes in a small group setting. While the SLP is responsible for planning and implementing the curriculum, a trained adult may guide some lessons. Placement and practice methods are individualized for each student, as appropriate.

Students are expected to complete daily practice assignments at home. The speech-language pathologist works with the classroom teacher and parents to reinforce and transfer skills and to provide periodic progress updates. Classes generally last for 17–20 hours.

If you have any questions, please contact the speech-language pathologist at your school.

Detach and return this permission slip to your child's classroom teacher. The school's speech-language pathologist will call you to talk about class times and parent training opportunities.

.....  
Student's Name \_\_\_\_\_ Teacher \_\_\_\_\_

☐ I am not interested in the class at this time.

☐ I would like to enroll my child in the Speech Improvement Class. I understand that this is a general education opportunity.

Parent signature \_\_\_\_\_ Date \_\_\_\_\_  
.....

## Assessment Resources

### **Articulation Consultation**

The Articulation Resource Center has been established to provide information and support for speech-language pathologists who serve children with both articulation differences and disorders. Our primary goal will be to educate speech-language pathologists about current assessment and intervention methodologies. The Center will disseminate information to staff regarding eligibility criteria, the Speech Improvement Class model, sound placement techniques, goal and report writing and teacher/parent presentation materials. We will also educate administrators, instructional assistants, parents and classroom teachers to facilitate improvement and implement appropriate strategies in the multiple contexts. If you would like assistance such as education or consultation for your students in the area of articulation, please use the Articulation Resource Center Intake form to make the request. Contact Jennifer Taps, coordinating SLP, to obtain a form at [jtaps@sandi.net](mailto:jtaps@sandi.net).

### **Apraxia Consultation**

The Childhood Apraxia of Speech Resource Center is dedicated to supporting speech-language pathologists working with students who have severe apraxia of speech. Its primary purpose is educational. The Center offers beginning, intermediate, and advanced training to district speech-language pathologists in the areas of assessment and intervention. The center's coordinator, Cindy Hale, also trains instructional and special education assistants, parents, and classroom teachers to implement practice strategies. The Center's mission is to help SLPs provide intensive, evidence-based intervention that will produce the best outcomes for students. Please use the Apraxia Resource Center Intake form to request an apraxia consultation. You can reach Aimee Rand, coordinating SLP, at [arand@sandi.net](mailto:arand@sandi.net).

### **III. Intervention Models**





# Overview of Intervention Models

## **Traditional Articulation Approach**

The most well-known spokesperson for the traditional articulation approach was Charles Van Riper. Van Riper outlined the basic steps in 1978.

The SLP helps the individual who produces an erred sound achieve correct production by:

- ✓ Identifying the Standard English sound and discriminating it from the erred sound.
- ✓ Approximating and refining the approximation until correct production is achieved.
- ✓ Practicing the new sound in language segments of increasing length and complexity (sounds, syllables, words, phrases, sentences, and conversation).
- ✓ Generalizing the sound to all speaking situations.

The Sequence for Articulation Intervention, Elements of a Traditional Articulation Lesson, and Facilitative Techniques may be found at the end of this section. Caroline Bowen, PhD, provides additional information on her Web site:

[http://members.tripod.com/Caroline\\_Bowen/TraditionalTherapy.htm](http://members.tripod.com/Caroline_Bowen/TraditionalTherapy.htm)

## **Complexity Approach**

The nonlinear phonology approach is guided by linguistic laws and sound features. Assessment yields information about the child's phonetic and phonemic inventories as well as stimulability. Treatment targets the sounds that are nonstimulable, phonetically complex, and later developing. Frequently, a minimal pair approach is employed to contrast two new sounds that differ by major class features (nasal vs. liquid vs. obstruent) and to maximize feature differences (place, voice, manner). In general, nonlinear treatment teaches the most difficult aspects of production to facilitate an overall change in intelligibility. For additional information, read Judith Gierut's Clinical Application of Phonological Complexity (CSHA Magazine, Vol. 34, No. 1, Summer 2004, p 6).

## **Principles of Motor Learning**

New research into motor learning affords SLPs with better, more effective techniques to use during intervention. Researchers emphasize the importance of motivation, task understanding, random practice, the amount of practice, and the type of feedback to learning and acquiring motor skills. For additional information, read Steven Skelton's Motor-skill Learning Approach to the Treatment of Speech-Sound Disorders (CSHA Magazine, Vol. 34, No. 1, Summer 2004, p 8).

# Randomized Practice Principles

- *Blocked practice (all practice items of target stimulus practiced together before moving on) leads to better performance in given sessions, but **randomized practice** results in better retention/motor learning.* (Skelton, 2004)
- The motor learning “specificity of learning” stipulates that the “most closely related movement/activity creates most improvement in overall skill.” Practice connected, meaningful speech for the most effective approach. (Therefore, oral-motor exercises are less related and do not create the most improvement in overall speech intelligibility.)
- Switch between levels of complexity (conversation, single words, syllables, etc.) rather than the traditional sequence of 80% at the sound level, 80% at the syllable level, 80% at the word level, etc. This enables students to develop greater flexibility in their use of sounds rather than at a fixed level.
- Randomization can be accomplished by:
  - switching levels
  - switching the order of target words
  - switching number of repetitions
  - changing body position - standing, sitting, etc.
  - changing stress, prosody, intonation, emotional context, rate of speech
- Provide delayed feedback (so the feedback loop is not interrupted and the child can develop further self-monitoring skills)

## Activities and Suggestions for Eliciting at least 150 items per session

- Use the attached practice chart to have children take own data (they create own key for a sense of ownership). This could draw random lines throughout the chart for home practice and speech practice to ensure that they are practicing random numbers of items.
- Have students subvocalize (say it with their “voices turned off”) during other students’ turns to increase the motor practice and number of repetitions. (You might have to monitor this initially, but they should become independent in their subvocalization.)
- Use tally counters to challenge students to produce 150 more items or more. (Go to <http://www.officedepot.com/ddSKU.do?level=SK&id=195768>)
- Have students track their totals using the practice charts and/or the counters. (You could add up the group total and have contests across groups to see who can produce the most. Also, you could multiply the group total by the number of students if they are subvocalizing. Example: Group total (710) X students in group (4) = 2,840 items for a 30-minute session.)
- Post a grid chart in the room with individual totals for each student and/or group total.

- Have students make cards with different levels (or make your own and put them in a jar) to ensure that they are getting mixed practice within a given session – sounds, syllables, words, phrases, sentences, conversation/stories. (They would draw a card for every turn.) You could further randomize this by specifying different word positions on each card and/or clusters. For instance, cards might say, “medial sound in sentence,” “final sound in phrase,” “initial cluster in single word,” etc.
- Have students spread out in the room (if possible) and work independently to produce more items.
- Create “stations” where students have to do something different every minute or so while practicing sounds. For instance, four stations could include the following: one child at the board practicing at various levels while drawing, one child at the table practicing while putting a puzzle together, one child lying on the floor while practicing and one child typing on the computer while practicing. This encourages them to use good sounds in a variety of contexts. You can yell “switch” at random times for them to move to a new station. On the board, you could write the sequence, such as **board → table → computer → floor → board**.
- The students can practice saying sounds, words, sentences, etc. while being given directions by other students (provided they can do so without interrupting the feedback loop too much). For instance, while saying a sentence with the target sound, one student could walk around the classroom and do whatever the other children suggest. This could include walking around the table, touching a picture, doing jumping jacks, closing their eyes, etc. You might have to model this for a session, but the kids will want to take over giving directions quickly. Each turn lasts a random amount of time and each student should have several turns in a given 30-minute session.
- Ask the students to help you create cards to “mix it up” in other ways. For their turns, they could choose one of these cards (in addition to the practice word and level) and practice it as suggested. These could include whispering, singing, stretching, saying something with different emotions, alternating between loud and quiet or high and low, while laughing, saying the words slowly, saying the words quickly, saying and spelling the target word, while dancing, while doing pushups, while walking, etc.
- Have the students go around the table and say the same thing (one at a time). This will cue them into monitoring their speech as well as others. You could also have them provide delayed feedback to each other.
- To emphasize the feedback loop, ask the students to cover their ears and close their eyes. They will practice a given target (random words and levels) while doing so. This blocks out all other stimuli and helps them concentrate on the motoric requirements for the target sounds and the resulting accuracy of production.
- Another way to emphasize the feedback loop is to use an echo microphone for each student’s turn.
- If you are using nonsense word stories, you can create cards with characters to color and label. During turns, students could switch colors as they switch levels and target words.
- Manipulatives can be used for random activities. For example, you could give each student counting bears of various colors and numbers (perhaps 25 total). (Go to <http://www.officedepot.com/txtSearchDD.do?uniqueSearchFlag=true&searchTxt=counting+bears>.) On a given turn, they could put all of the yellow and blue ones into a cup while saying the practice items. During the next turn, they could do something different and on and on. This ensures that they will practice different numbers. You could also have them create patterns with the colors or put the manipulatives into shapes (all of the bears into a circle, etc.).
- Have the students draw a number from an envelope to determine the random number of items to say. A sheet of numbers is attached to this for you to cut apart.
- Have the students add the number of items practiced on the board. The first will write the number on the board, the second will add his/her total to the first’s total. The third will add his/her number to the total and on and on.

# Sequence for Traditional Articulation Intervention\*

This sequence combines principles from both the traditional articulation and behavioral approaches.

- I. Is Motivated.
  - A. Is aware of problem and wants to eliminate or modify it.
- II. Discriminates the Target Sound: Ear Training.
  - A. Identifies target sound's auditory characteristics.
  - B. Is bombarded with sound to ensure recognition.
  - C. Discriminates target sound from other sounds.
  - D. Discriminates target sound in minimally paired words.
  - E. Discriminates target sound from incorrect production.
  - F. Discriminates correct/incorrect production in own speech.
- III. Produces the Sound In Isolation: Production Methods.
  - A. Progressive approximation
    - 1. Intervention begins with erred placement.
    - 2. Client makes transitional sounds, shifting gradually closer to correct production.
    - 3. Client learns to vary degree of error.
    - 4. Outcome is to improve production by reducing amount of deviation.
  - B. Auditory stimulation
    - 1. Intervention depends on quality of initial ear training.
    - 2. Clinician models target sound.
    - 3. Client imitates target sound.
    - 4. Both evaluate correctness of production.
    - 5. Outcome is to achieve correct production by imitation.
  - C. Phonetic placement
    - 1. Clinician teaches discrete placement of sound using descriptions, visual, and moto-kinesthetic methods.
    - 2. Outcome is to achieve production of target sound by assuming correct placement.
  - D. Modification of other sounds
    - 1. Client makes the first sound.
    - 2. Clinician directs client to move articulators to target sound while making first sound.
    - 3. Outcome is to achieve production of target sound by modifying another sound that is correctly produced.
    - 4. Example: *t* to *s*. Client makes /t/, then slowly withdraws and elevates tongue tip until /s/ is produced.
  - E. Key word
    - 1. Clinician determines words in which client makes target sound correctly by writing words containing target sound in different phonetic contexts and directing client to say each one 10 times.
    - 2. Client says correct word 100 times.
    - 3. Client says correct word and tries to prolong target sound for increasing counts up to 20.
    - 4. Outcome is to generalize correct production of target sound to all phonetic environments.
- IV. Stabilizes the Correct Sound.
  - A. Produces the target sound in nonsense syllables.
    - 1. Sequence
      - a. target + vowel
      - b. vowel + target
      - c. target + vowel + (front, mid, back) consonant
      - d. (front, mid, back) consonant + vowel + target
    - 2. Sample word list for /s/:

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\* Sources: Baker and Ryan (1971), Van Riper (1984), Winitz (1975)

Consonant + Vowel (Initial Position)	Vowel + Consonant (Final Position)	Consonant + Vowel + Consonant (Initial Position)	Consonant + Vowel + Consonant (Final Position)
<i>see</i>	<i>ees</i>	<i>seep</i>	<i>fees</i>
<i>si</i>	<i>is</i>	<i>sip</i>	<i>fis</i>
<i>se</i>	<i>es</i>	<i>sep</i>	<i>fes</i>
<i>sae</i>	<i>aes</i>	<i>saep</i>	<i>faes</i>
<i>sa</i>	<i>as</i>	<i>sap</i>	<i>fas</i>
<i>su</i>	<i>us</i>	<i>sup</i>	<i>fus</i>
<i>so</i>	<i>os</i>	<i>sod</i>	<i>tos</i>
<i>sau</i>	<i>aus</i>	<i>saud</i>	<i>faus</i>
<i>soe</i>	<i>oes</i>	<i>soed</i>	<i>toes</i>
<i>soo</i>	<i>oos</i>	<i>sood</i>	<i>toos</i>
<i>sie</i>	<i>ies</i>	<i>sied</i>	<i>ties</i>
<i>sue</i>	<i>ues</i>	<i>suek</i>	<i>bues</i>
<i>sow</i>	<i>ows</i>	<i>sowk</i>	<i>gows</i>
<i>soi</i>	<i>ois</i>	<i>soip</i>	<i>bois</i>
<i>ser</i>	<i>ers</i>	<i>serk</i>	<i>gers</i>
<i>sor</i>	<i>ors</i>	<i>sork</i>	<i>gors</i>
<i>sar</i>	<i>ars</i>	<i>sark</i>	<i>gars</i>

3. If client's articulation error is a substitution, do not include substituted sound in practice words.  
Example: If *th/s*, then omit /th/ from practice material.
- B. Produces the target sound in the initial position of words.
  1. Begin with key words determined by using Key Word Method or noted during nonsense syllable stage.
  2. Use pictures beginning with target sound.
  3. Use Van Riper's Reconfiguration Technique (not commonly used).
    - a. Client reads or talks substituting non-errored sounds.
      1. Example: A student with lisp is asked to substitute *b/f* while reading "Sammy caught a bish with his hook and line."
      2. Purpose is to train client to substitution task.
    - b. Client substitutes target sound for other sounds but not for itself.
      1. Example: A student with a lisp reads, "Sammy **sss**aught a fish with his hook and line."
    - c. Client substitutes another sound for the target sound in the same material
      1. Example: A student with a lisp reads, "**B**ammy caught a fish with his hook and line."
    - d. Client omits target sound when it begins a word.
      1. Example: A student reads, "-ammy caught a fish with his hook and line."
    - e. Client substitutes target sound for errored sound.
      1. Example: A student reads "**Sss**ammy caught a fish with his hook and line."
  4. Use Van Riper's Talking/Writing Method.
    - a. Client says any word containing target sound while writing its symbol for specified number of lines.
  5. Use Van Riper's Signaling Techniques.
    - a. Client prolongs or repeats the target sound. Clinician signals using finger snap or hand drop. Client immediately says a predesignated vowel or word part, then repeats whole word.
      1. Example: **sssss** (signal) **un**; **sun**
  6. Develop and practice word lists following sequence noted in IV.A.
- C. Produces the target sound in the final position of words.
  1. Use methods 1, 3–5 recommended in IV.B.
- D. Produces the target sound in the medial positions of words.
  1. Use methods 1, 3–5 recommended in IV.B.
- E. Produces the target sound in multisyllabic words.

1. Use methods 1, 3–5 recommended in IV.B.
- F. Produces the target sound in clusters in all positions.
  1. Sequence
    - a. Target + vowel + consonant cluster
    - b. Consonant cluster + vowel + target
    - c. Target in initial consonant cluster
    - d. Target in final consonant cluster
    - e. Target in IMF positions in multisyllabic words
- G. Produces the target sound in singleton and clusters in I, M, F position of phrases.
  1. Practice target words in carrier phrases.
  2. Practice phrases with contextual variety.
- H. Produces the target sound in sentences.
  1. Reads key words in sentences or talks about pictures that elicit target sound.
  2. Practices sentences with contextual variety.
  3. Formulates own sentences using key words.
  4. Client concentrates on monitoring and evaluating own production.
    - a. Have client tally the number of times the target sound is produced.
    - b. Tape-record and play back to evaluate production.
  5. Begins carry-over assignments.
    - a. Have client request object (has target sound) from another person.
    - b. Have client deliberately use key word in speech to specified others.
    - c. Have client carry card and tally number of correct productions during a specified time period.
- I. Produces the target sound in controlled conversation.
  1. Reads key words and sentences in passages.
  2. Role-plays situations using key words and sentences.
  3. Creates and recites dialogue using key words and sentences.
  4. Talks about topics using key words and sentences.
- J. Produces the target sound in spontaneous conversation.
  1. Self-evaluates production in a variety of speaking situations.

## **Elements of a Traditional Articulation Lesson**

Sessions range from one to two times a week for 20–60 minutes each session.

1. Take attendance, collect homework and give points.  
Assign attendance responsibility to a student or have a sign-in sheet.
2. Review homework and ask students to identify easy and difficult items.
3. Give overview of the day's lesson.
4. Begin group oral motor work. Use model, lead, and test format.  
Model the exercise.  
Lead the group practice. Give specific, corrective feedback.  
Ask students to perform the exercises individually. Tally their responses.  
Give specific corrective feedback.
5. Introduce lesson's target behavior. Use model, lead, and test format to establish behavior.  
Model the exercise.  
Lead the group practice. Give specific, corrective feedback.  
Ask students to perform the exercises individually. Tally their responses.  
Give specific corrective feedback.
6. Practice target behavior with whole group, in small groups, with partners, and individually to stabilize behavior.
7. Total students' productions, record and give points.
8. Explain homework.
9. Dismiss.

### **Placement Level**

#### **Step 1**

Model correct placement using one or more of the following methods: phonetic placement, approximation, auditory stimulation, or shaping.

#### **Step 2**

Lead the students by performing the exercise with them. Initially do this with the whole group. Divide into small groups or work with individual students as needed. Direct the students to watch your model, each other, or themselves. Give specific, corrective feedback. Return to Step 1 if students are unable to find correct placement.

#### **Step 3**

Test the students by asking them to perform the target behavior independently. Give corrective feedback. Return to Step 1 or 2 if students are unable to find correct placement.

#### **Step 4**

Once the students produce the target behavior independently, begin mass practice.

Corrective feedback should be specific, immediate and multisensory. Use a 100% reinforcement schedule at this level. Multisensory feedback includes giving verbal cues, drawing pictures and diagrams, marking plus and minus, using a token system, and working with a mirror and tape recorder.

Mastery is usually set at 70–80%.

### **Word Level**

#### **Step 1**

Model the activity.

#### **Step 2**

Lead the students as a group through a few items to make sure that they understand the task.

#### **Step 3**

Test the students individually. Ask them to perform the target behavior independently. Give specific, corrective feedback.

**Step 4**

Once the students produce the target behavior independently, begin mass practice.

Corrective feedback should be specific, immediate, and multisensory. Use a 100% reinforcement schedule at this level. Multisensory feedback includes giving verbal cues, drawing pictures and diagrams, marking plus and minus, using a token system, and working with a mirror and tape recorder.

Students should begin intensive self-monitoring and self-correction at this level.

Mastery is usually set at 70–80%.

**Sentence Level****Step 1**

Model the activity.

**Step 2**

Lead the students as a group through a few items to make sure that they understand the task.

**Step 3**

Test the students individually. Ask them to perform the target behavior independently. Give corrective feedback.

**Step 4**

Once the students produce the target behavior independently, begin mass practice.

Corrective feedback should be specific, immediate and multisensory. Use a 100% reinforcement schedule at this level. Multisensory feedback includes giving verbal cues, drawing pictures and diagrams, marking plus and minus, using a token system, and working with a mirror and tape recorder.

Students should begin intensive self-monitoring at this level.

Mastery is usually set at 70–80%.



## **Controlled or Spontaneous Conversation Level**

### **Step 1**

Model the activity.

### **Step 2**

Lead the students as a group through a few items to make sure that they understand the task.

### **Step 3**

Test the students individually. Ask them to perform the target behavior independently. Give corrective feedback.

### **Step 4**

Once the students produce the target behavior independently, begin mass practice.

Corrective feedback should be specific, immediate or delayed, and multisensory. Use a 50–60% reinforcement schedule at this level. Multisensory feedback includes giving verbal cues, drawing pictures and diagrams, marking plus and minus, using a token system, and working with a mirror and tape recorder.

Mastery is usually set at 70–80%. Students with multiple articulation errors who are able to correctly produce their first target sound in controlled conversations are ready for placement work on their second misarticulated sound.

# Placement Strategies for Later-Developing Sounds

*Compiled from brainstorming on September 23, 2004 at Senior Study Group in SDCS, brainstorming on October 19, 2004 with Cajon Valley and Santee staff (seen below as CV/S) and other resources.*

During the pre-practice phase of treatment, have the child describe how to make each sound.

## 1. Strategies for /r/ and /ɹ/

Place: Palatal

Voice: Voiced

Manner: Liquid

### Shaping techniques:

- Shape from /l/ to /r/ (from one liquid to another)
- Shape from /i/ to /ɹ/
- Stimulate with productions of /gr/ and /kr/ first – then breakdown into /g/ and /r/ and /k/ and /r/ and phase out /g/ and /k/
- Shape with /i/, /g/ (to move tongue back into /ɹ/)
- Shape from /n/ to /r/ - slide tongue back without letting it lower (train track metaphor)

### Metaphors/Phonetic Placement:

- Have the child smile to inhibit lip rounding from /w/
- Have the child bite on tongue to feel the sides of the tongue on upper molars and lift tip and slide tongue back like train track
- Racing car sound (ruh) (Bleile book)
- Mad dog sound (grrr), growling tiger sound (grrr) or the arm wrestling sound (errr) (Bleile book)
- Tongue is a muscle, make tongue stronger, liken it to the gym (bicep curls like at the gym, tongue curls) (CV/S)
- Teach that the sound starts in the back of the throat, not the lips (CV/S)

### Moto-kinesthetic approaches:

- Lift tongue back with tongue depressor
- Stick tongue out, pretend that your tongue itches and pull back
- Keep mouth open so tongue does all of the work and kinesthetic awareness is increased
- Have the child cup his/her hand to show that tongue tip is raised and slightly curled back (Bleile book)
- Place a little peanut butter or another sticky food on a Q-tip, touch the Q-tip to the alveolar ridge and ask client to remove the food with tongue tip (Bleile book)
- Use hand to imitate lifting tongue (CV/S)
- Bite down on straw (or licorice strings) – do not let your tongue cross over the straw (CV/S)
- Use hand motion as a cobra to show the hard /r/ (CV/S)
- Put hands over the ears and close eyes to self-monitor and focus the child's feedback loop on only the target sound (CV/S)

## 2. Strategies for /l/

Place: Alveolar

Voice: Voiced

Manner: Liquid

### Shaping techniques:

- Shape from tongue clicking sound to /l/

### Metaphors/Phonetic Placement:

- Lift tongue up to alveolar ridge
- Start with tongue between teeth and move back to alveolar ridge
- Make tongue big and let it go
- The singing sound (la-la-la) (Bleile book)
- Tongue tip should be touching where the gums and front teeth meet (CV/S)

### Moto-kinesthetic approaches:

- Orthodontic rubber band on tongue tip and lift
- Touch alveolar ridge with finger, toothette, etc.
- Peanut butter on alveolar ridge
- Hold up life saver onto alveolar ridge
- Place a little peanut butter or another sticky food on a Q-tip, touch the Q-tip to the alveolar ridge and ask client to remove the food with tongue tip (Bleile book)
- Put hands over the ears and close eyes to self-monitor and focus the child's feedback loop on only the target sound (CV/S)

## 3. Strategies for /ʃ/

Place: Palato-alveolar

Voice: Voiceless

Manner: Fricative

### Shaping techniques:

- Shape from /tʃ/ to /ʃ/ - extend the latter portion of /tʃ/
- Shape from /s/ to /ʃ/ (can also use tongue depressor)

### Metaphors/Phonetic Placement:

- The “quiet” sound
- “Back-of-the-hill” sound/long sound (Bleile book)
- Lips out like a fish (CV/S)
- Sides of tongue touch inside top back teeth (CV/S)
- Teeth open a little bit (CV/S)
- “Fat air” sound (CV/S)
- Tongue tip doesn't touch anywhere (CV/S)

- “Pucker like you’re going to kiss your mom.” (CV/S)

#### **Moto-kinesthetic approaches:**

- Place a little peanut butter or another sticky food on a Q-tip, touch the Q-tip to the postalveolar ridge and ask client to remove the food with tongue tip (Bleile book)
- Put hands over the ears and close eyes to self-monitor and focus the child’s feedback loop on only the target sound (CV/S)

## **4. Strategies for /tʃ/**

Place: Palato-alveolar

Voice: Voiceless

Manner: Affricate

#### **Shaping techniques:**

- Pair words ending in /t/ with words beginning in /j/, e.g. “got you”
- Spanish /tʃ/ words – some bilingual kids produce it correctly in Spanish, but ʃ/tʃ in English
- Shape from /t/ to /tʃ/

#### **Metaphors/Phonetic Placement:**

- Train sound – [tʃ], [tʃ], [tʃ]
- “Sneeze” sound – “ah-choo”
- “Fat-pushed” sound per Lindamood
- Put tongue up for /t/, block the air behind the tongue, then let it out quickly – “explode it”
- Lips – tense, slightly pursed (CV/S)
- Feel puffs of air pushed out (CV/S)
- Slide tongue forward & down – push air out (CV/S)
- Sides of tongue touch inside top next to teeth (CV/S)

#### **Moto-kinesthetic approaches:**

- Hand signals – skinny for /s/ (one finger), fat for /tʃ/ (four fingers)
- Place a little peanut butter or another sticky food on a Q-tip, touch the Q-tip to the postalveolar ridge and ask client to remove the food with tongue tip (Bleile book)
- Have the child hold his/her hands together tightly and then separate them quickly to indicate the stop onset and fricative release of affricates (Bleile book)
- Put hands over the ears and close eyes to self-monitor and focus the child’s feedback loop on only the target sound (CV/S)

## **5. Strategies for /dʒ/**

Place: Palato-alveolar

Voice: Voiceless

Manner: Affricate

**Shaping techniques:**

- /d/ to /dʒ/ (CV/S)
- /d/ to /l/ to /ʒ/(CV/S)
- Use opposing words d → r & d → ʒ (i.e. “drive” vs. “jive”) (CV/S)

**Metaphors/Phonetic Placement:**

- Train sound – [tʃ], [tʃ], [tʃ] chugging along, comes to a hill – child has to really turn the “motor” on to get up the hill
- Anchoring – placement of rest of tongue sides touching bottom of upper side teeth
- Speech coach – student manager, in charge of practice – like training for a marathon (CV/S)

**Moto-kinesthetic approaches:**

- Put thumb under tongue – lift up and say /dʒ/
- Touch throat to feel vibration (“noisy brother” of /tʃ/)
- “Tickle behind the teeth”
- Push against the “spot”
- Place a little peanut butter or another sticky food on a Q-tip, touch the Q-tip to the postalveolar ridge and ask client to remove the food with tongue tip (Bleile book)
- Have the child hold his/her hands together tightly and then separate them quickly to indicate the stop onset and fricative release of affricates (Bleile book)
- Put hands over the ears and close eyes to self-monitor and focus the child’s feedback loop on only the target sound (CV/S)

## 6. Strategies for /s/

Place: Alveolar

Voice: Voiceless

Manner: Fricative

**Shaping techniques:**

- /t/ to /s/ shaping (not for kids who front target /s/)

**Metaphors/Phonetic Placement:**

- Sammy the Snake
- The Snake Sound
- Lateral butterfly image – keeping sides of tongue up by teeth
- Flat tire sound
- Keep the monkey in the cage
- Keep the snake behind the gate

**Moto-kinesthetic approaches:**

- Use straw to create airflow
- Smile in the mirror to get proper lip placement
- Place a little peanut butter or another sticky food on a Q-tip, touch the Q-tip to the alveolar ridge and ask client to remove the food with tongue tip (Bleile book)
- Put hands over the ears and close eyes to self-monitor and focus the child's feedback loop on only the target sound (CV/S)

## 7. Strategies for /z/

Place: Alveolar

Voice: Voiceless

Manner: Fricative

**Shaping techniques:**

- /t/ to /s/ to /z/

**Metaphors/Phonetic Placement:**

- Put tongue tip behind teeth, slightly touching bottom teeth while blade bunches a little and comes close to alveolar ridge. Then turn sound "on" and have air push through a narrow path down tongue.
- "Keep the gate closed"
- Bee sound

**Moto-kinesthetic approaches:**

- Tongue depressor between alveolar ridge and teeth with tongue tip down (keep that space)
- Use straw up against teeth, listen for whistling in straw
- Use mirror to monitor tongue placement
- Place a little peanut butter or another sticky food on a Q-tip, touch the Q-tip to the alveolar ridge and ask client to remove the food with tongue tip (Bleile book)
- Put hands over the ears and close eyes to self-monitor and focus the child's feedback loop on only the target sound (CV/S)

**Additional recommendations for all sounds:**

1. Rubber mouth puppet available from [www.superduperinc.com](http://www.superduperinc.com)
2. Grape-flavored tongue depressors for stimulating sounds
3. Fun dip candy sticks for use as tongue depressors

## Placement Techniques Resources:

- Bauman-Waengler, J. (2000). *Articulatory and phonological impairments: A clinical focus*. Needham Heights, MA: Allyn & Bacon.
- Bleile, K. (1995). *Manual of Articulation and Phonological Disorders*. San Diego, CA: Singular Publishing Group.
- Jones, P.H. (2004). *Finding the Elusive Vocalic R Sounds*, Advance Magazine.
- Ristuccia, C. (2002). *The Entire World of R*. Carlsbad, Say It Right.
- Sacks, S. (2003). *Multimodality Approach to Articulation*, Advance Magazine. (Articles for /s/ and /r/)
- Secord, W. (1981). *Eliciting Sounds*. (1st ed.) (new edition coming out in April 2005)
- Weiss, I.F. (2002). *New Technique Helps Remediate /r/*. Advance Magazine.
- <http://www.mnsu.edu/comdis/kuster2/therapy/rtherapy.html>
- [http://members.tripod.com/Caroline\\_Bowen/home.html](http://members.tripod.com/Caroline_Bowen/home.html)
- <http://home.comcast.net/~speechguide/sample.html>

## **SLP Self-Study**

Use the Self-Study Record Form for Students with IEPs for Single Sounds to monitor your annual progress. While intervention time will vary according to attendance, motivation, severity, ability, age, instruction and practice, many students correct single sound errors within 15-20 hours of small group intervention. If you have a student who is progressing more slowly, consider contacting the Articulation Resource Center to arrange a consultation.



### **Self-Study Record Form for Students with IEPs for Single Sounds**

A student typically requires 15-20 hours of intervention to correct a sound. Many students achieve placement after 5 hours, words and sentences after 10 hours, conversation by 15 hours, and generalization to all speaking situations by 17-20 hours. Use this form to monitor your annual progress.

<b>Student's Name</b>	<b>Target Sound</b>	<b>Initial IEP Date</b>	<b>Frequency and Amount of Service</b>	<b>Review Date</b>	<b>Number of Intervention Hours to Date</b>	<b>Projected Dismissal Date</b>
1.						
2.						
3.						
4.						
5.						
6.						
7.						
8.						
9.						
10.						